

Abstract of the Disclosure

An apparatus for adaptively modulating/demodulating signals in a multi-input multi-output (MIMO) system having
5 a layered time-space architecture detector and a method thereof is disclosed. The apparatus includes: a bit and power allocation information calculator for deciding an equivalent channel gain in a reverse order of Vertical-Bell laboratories Space Time (V-BLAST) based on MIMO channel
10 information feedbacked from a receiver and determining the number of bits and transmission power to be transmitted to each transmitting antenna by using the equivalent channel gain; and adaptive modulation means for modulating signal of each layer with corresponding modulation method based on
15 the determined number of bits and transmitting power, controlling the transmitting power and transmitting the adaptively modulated signal through each transmitting antenna. The present invention can improve performance without increase of implementation complexity and easily
20 expand to MIMO-OFDM system by adaptively modulating and demodulating signals in reverse order of conventional V-BLAST detection method.